

SEQUENCE LISTING

<110> Madeline M. Butler
Andrew T. Watt
Susan M. Freier
Jacqueline Wyatt

<120> ANTISENSE MODULATION OF HORMONE-SENSITIVE LIPASE EXPRESSION

<130> ISPH-0587

<160> 230

<210> 1

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 1

tccgtcatcg ctcctcaggg

20

<210> 2

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 2

atgcattctg cccccaagga

20

<210> 3

<211> 3804

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (278)...(3508)

<400> 3

cttcttgtaa gagagtgcta ggcacatagc cccctcctat tcctaatacct cccaccaaag 60
aaagaggcac agagttcatt acttagtggg ggccagctgt gatcggccaa ctgccagctg 120
ccttaaaaag gaagaccagt gatgctagga tggagtgaag cccaagagga agtgccatca 180
tgaggaaatca atgagagatc tgtgaagaga gagggctggg tgggagccca gaaggataga 240
acctggaaga tcaatatctc ccgtgagggg aataaca atg gag cca ggt tct aag 295
Met Glu Pro Gly Ser Lys
1 5

tca gtg tct agg tca gac tgg caa cct gaa cca cac cag agg cct ata 343
Ser Val Ser Arg Ser Asp Trp Gln Pro Glu Pro His Gln Arg Pro Ile
10 15 20

[illegible]

Pro	Ala	Thr	Met	Gly	Gly	Met	Val	Ala	Gln	Gly	Val	Lys	Leu	Gly	Phe	
			250					255					260			
aaa	gga	aaa	tct	ggt	tat	aaa	gtg	atg	tca	gga	tac	agt	ggg	acg	tcg	1111
Lys	Gly	Lys	Ser	Gly	Tyr	Lys	Val	Met	Ser	Gly	Tyr	Ser	Gly	Thr	Ser	
		265					270					275				
cca	cat	gag	aaa	acc	agt	gct	cgg	aat	cac	aga	cac	tac	cag	gat	aca	1159
Pro	His	Glu	Lys	Thr	Ser	Ala	Arg	Asn	His	Arg	His	Tyr	Gln	Asp	Thr	
		280					285					290				
gcc	tca	agg	ctc	atc	cac	aac	atg	gac	ctg	cgc	aca	atg	aca	cag	tcg	1207
Ala	Ser	Arg	Leu	Ile	His	Asn	Met	Asp	Leu	Arg	Thr	Met	Thr	Gln	Ser	
					300					305					310	
ctg	gtg	act	ctg	gcg	gag	gac	aac	ata	gcc	ttc	ttc	tcg	agc	cag	ggt	1255
Leu	Val	Thr	Leu	Ala	Glu	Asp	Asn	Ile	Ala	Phe	Phe	Ser	Ser	Gln	Gly	
				315					320					325		
cct	ggg	gaa	acg	gcc	cag	cgg	ctg	tca	ggc	gtt	ttt	gcc	ggt	gta	cgg	1303
Pro	Gly	Glu	Thr	Ala	Gln	Arg	Leu	Ser	Gly	Val	Phe	Ala	Gly	Val	Arg	
			330					335					340			
gag	cag	gcg	ctg	ggg	ctg	gag	ccg	gcc	ctg	ggc	cgc	ctg	ctg	ggt	gtg	1351
Glu	Gln	Ala	Leu	Gly	Leu	Glu	Pro	Ala	Leu	Gly	Arg	Leu	Leu	Gly	Val	
		345					350					355				
gcg	cac	ctc	ttt	gac	ctg	gac	cca	gag	aca	ccg	gcc	aac	ggg	tac	cgc	1399
Ala	His	Leu	Phe	Asp	Leu	Asp	Pro	Glu	Thr	Pro	Ala	Asn	Gly	Tyr	Arg	
	360					365					370					
agc	cta	gtg	cac	aca	gcc	cgc	tgc	tgc	ctg	gcg	cac	ctc	ctg	cac	aaa	1447
Ser	Leu	Val	His	Thr	Ala	Arg	Cys	Cys	Leu	Ala	His	Leu	Leu	His	Lys	
	375				380					385					390	
tcc	cgc	tat	gtg	gcc	tcc	aac	cgc	cgc	agc	atc	ttc	ttc	cgc	acc	agc	1495
Ser	Arg	Tyr	Val	Ala	Ser	Asn	Arg	Arg	Ser	Ile	Phe	Phe	Arg	Thr	Ser	
				395					400					405		
cac	aac	ctg	gcc	gag	ctg	gag	gcc	tac	ctg	gct	gcc	ctc	acc	cag	ctc	1543
His	Asn	Leu	Ala	Glu	Leu	Glu	Ala	Tyr	Leu	Ala	Ala	Leu	Thr	Gln	Leu	
			410				415						420			
cgc	gct	ctg	gtc	tac	tac	gcc	cag	cgc	ctg	ctg	gtt	acc	aat	cgg	ccg	1591
Arg	Ala	Leu	Val	Tyr	Tyr	Ala	Gln	Arg	Leu	Leu	Val	Thr	Asn	Arg	Pro	
	425						430					435				
ggg	gta	ctc	ttc	ttt	gag	ggc	gac	gag	ggg	ctc	acc	gcc	gac	ttc	ctc	1639
Gly	Val	Leu	Phe	Phe	Glu	Gly	Asp	Glu	Gly	Leu	Thr	Ala	Asp	Phe	Leu	
	440					445					450					
cgg	gag	tat	gtc	acg	ctg	cat	aag	gga	tgc	ttc	tat	ggc	cgc	tgc	ctg	1687
Arg	Glu	Tyr	Val	Thr	Leu	His	Lys	Gly								

[illegible]

ctc ctt ggc tca aca ggg gaa cga atc tgc ctt gcg ggg gac agt gca	2455
Leu Leu Gly Ser Thr Gly Glu Arg Ile Cys Leu Ala Gly Asp Ser Ala	
715 720 725	
ggc ggg aac ctc tgc ttc acc gtg gct ctt cgg gca gca gcc tac ggg	2503
Gly Gly Asn Leu Cys Phe Thr Val Ala Leu Arg Ala Ala Ala Tyr Gly	
730 735 740	
gtg cgg gtg cca gat ggc atc atg gca gcc tac ccg gcc aca atg ctg	2551
Val Arg Val Pro Asp Gly Ile Met Ala Ala Tyr Pro Ala Thr Met Leu	
745 750 755	
cag cct gcc gcc tct ccc tcc cgc ctg ctg agc ctc atg gac ccc ttg	2599
Gln Pro Ala Ala Ser Pro Ser Arg Leu Leu Ser Leu Met Asp Pro Leu	
760 765 770	
ctg ccc ctc agt gtg ctc tcc aag tgt gtc agc gcc tat gct ggt gca	2647
Leu Pro Leu Ser Val Leu Ser Lys Cys Val Ser Ala Tyr Ala Gly Ala	
775 780 785 790	
aag acg gag gac cac tcc aac tca gac cag aaa gcc ctc ggc atg atg	2695
Lys Thr Glu Asp His Ser Asn Ser Asp Gln Lys Ala Leu Gly Met Met	
795 800 805	
ggg ctg gtg cgg cgg gac aca gcc ctg ctc ctc cga gac ttc cgc ctg	2743
Gly Leu Val Arg Arg Asp Thr Ala Leu Leu Leu Arg Asp Phe Arg Leu	
810 815 820	
ggt gcc tcc tca tgg ctc aac tcc ttc ctg gag tta agt ggg cgc aag	2791
Gly Ala Ser Ser Trp Leu Asn Ser Phe Leu Glu Leu Ser Gly Arg Lys	
825 830 835	
tcc cag aag atg tcg gag ccc ata gca gag ccg atg cgc cgc agt gtg	2839
Ser Gln Lys Met Ser Glu Pro Ile Ala Glu Pro Met Arg Arg Ser Val	
840 845 850	
tct gaa gca gca ctg gcc cag ccc cag ggc cca ctg ggc acg gat tcc	2887
Ser Glu Ala Ala Leu Ala Gln Pro Gln Gly Pro Leu Gly Thr Asp Ser	
855 860 865 870	
ctc aag aac ctg acc ctg agg gac ttg agc ctg agg gga aac tcc gag	2935
Leu Lys Asn Leu Thr Leu Arg Asp Leu Ser Leu Arg Gly Asn Ser Glu	
875 880 885	
acg tcg tcg gac acc ccc gag atg tcg ctg tca gct gag aca ctt agc	2983
Thr Ser Ser Asp Thr Pro Glu Met Ser Leu Ser Ala Glu Thr Leu Ser	
890 895 900	
ccc tcc aca ccc tcc gat gtc aac ttc tta tta cca cct gag gat gca	3031
Pro Ser Thr Pro Ser Asp Val Asn Phe Leu Leu Pro Pro Glu Asp Ala	
905 910 915	
ggg gaa gag gct gag gcc aaa aat gag ctg agc ccc atg gac aga ggc	3079
Gly Glu Glu Ala Glu Ala Lys Asn Glu Leu Ser Pro Met Asp Arg Gly	
920 925 930	

```

ctg ggc gtc cgt gcc gcc ttc ccc gag ggt ttc cac ccc cga cgc tcc 3127
Leu Gly Val Arg Ala Ala Phe Pro Glu Gly Phe His Pro Arg Arg Ser
935                      940                      945                      950

agc cag ggt gcc aca cag atg ccc ctc tac tcc tca ccc ata gtc aag 3175
Ser Gln Gly Ala Thr Gln Met Pro Leu Tyr Ser Ser Pro Ile Val Lys
                      955                      960                      965

aac ccc ttc atg tgc ccg ctg ctg gca ccc gac agc atg ctc aag agc 3223
Asn Pro Phe Met Ser Pro Leu Leu Ala Pro Asp Ser Met Leu Lys Ser
                      970                      975                      980

ctg cca cct gtg cac atc gtg gcg tgc gcg ctg gac ccc atg ctg gac 3271
Leu Pro Pro Val His Ile Val Ala Cys Ala Leu Asp Pro Met Leu Asp
                      985                      990                      995

gac tgc gtc atg ctc gcg cgg cga ctg cgc aac ctg ggc cag ccg gtg 3319
Asp Ser Val Met Leu Ala Arg Arg Leu Arg Asn Leu Gly Gln Pro Val
1000                      1005                      1010

acg ctg cgc gtg gtg gag gac ctg ccg cac ggc ttc ctg acc cta gcg 3367
Thr Leu Arg Val Val Glu Asp Leu Pro His Gly Phe Leu Thr Leu Ala
1015                      1020                      1025                      1030

gcg ctg tgc cgc gag acg cgc cag gcc gca gag ctg tgc gtg gag cgc 3415
Ala Leu Cys Arg Glu Thr Arg Gln Ala Ala Glu Leu Cys Val Glu Arg
                      1035                      1040                      1045

atc cgc ctc gtc ctc act cct ccc gcc gga gcc ggg ccg agc ggg gag 3463
Ile Arg Leu Val Leu Thr Pro Pro Ala Gly Ala Gly Pro Ser Gly Glu
                      1050                      1055                      1060

acg ggg gct gcg ggg gta gac ggg ggc tgc ggg ggg cga cac taa 3508
Thr Gly Ala Ala Gly Val Asp Gly Gly Cys Gly Gly Arg His
                      1065                      1070                      1075

aagcctgttg ttcccatctg cgccggcctc cgatcatgaat gccttcggg ccggggcgaa 3568
ggggacgcgg gctgtgctta cttaagtcgg ggggtggcaag ggggcggggc gggggccgaa 3628
agctgagacc ctccgcccg ggagggggac gcgcacacac accggtcacc gagacggctg 3688
gacctgcacg ccaccgctgc cttttgctgc tgctgctgcg gcgaccgcg cagggacggg 3748
gactggccct cccttgccagg tcggttttgt ttgttgtaaa taaaagtatt taatta 3804

```

<210> 4
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR Primer

<400> 4
 acctgacgac aatgacaca 19

<210> 5
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
<223> PCR Primer

<400> 5
tggctcgaga agaaggctat g 21

<210> 6
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Probe

<400> 6
cctccgccag agtcaccagc g 21

<210> 7
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 7
gaaggtgaag gtcggagtc 19

<210> 8
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 8
gaagatggtg atgggatttc 20

<210> 9
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Probe

<400> 9
caagcttccc gttctcagcc 20

<210> 10
<211> 3172
<212> DNA
<213> Mus musculus

<220>

<221> CDS
 <222> (593)...(2872)

<400> 10
 ctgagaagga aacttgaggt gggacttgaa tgcgtgggtc ttcagaagga gaaccgctaa 60
 gcatcccgat ttcccagaac aagaaggaca agtccaaaga cagtaaaca agataggagt 120
 tcacccttga atacctggaa ggaagaagga agagggtggg cccgcctctg gaatagaggg 180
 ctccaggagat tggactccta gatccaggaa gaaggccaaa agacctgggtc agtgggtttc 240
 taattctgaa gaggagctag tcagggtctg ctccagtctga gggcttcgac tcccagctgc 300
 tagaaagagg atgaggatgc agccgcaggc ttctagaaga caaggagata aattcctagg 360
 tgtgagagag aagataatag gaaggcccct gcgtctccag gaggattggg acagacctga 420
 ggaaggagag ggctcggctt tggactcctg catctcagca aggacggtcc taggtttgaa 480
 tacttggttg gcctagggaa agagaggaag ggcattggact cctgggcctg acagagcaaa 540
 gggtaaccac agaccttccc atcttctcac agcctcagcg ttctcacaca gc atg gat 598
 Met Asp
 1

tta cgc acg atg aca cag tgc ctg gtg aca ctc gca gaa gac aat atg 646
 Leu Arg Thr Met Thr Gln Ser Leu Val Thr Leu Ala Glu Asp Asn Met
 5 10 15

gcc ttc ttc tca agc cag ggc cca gga gag aca gca cgg cgg ctg tct 694
 Ala Phe Phe Ser Ser Gln Gly Pro Gly Glu Thr Ala Arg Arg Leu Ser
 20 25 30

aat gtc ttt gca ggt gtt cgg gaa cag gca ctg ggg ctg gaa cca acc 742
 Asn Val Phe Ala Gly Val Arg Glu Gln Ala Leu Gly Leu Glu Pro Thr
 35 40 45 50

cta ggc caa ctg ttg ggt gtg gca cac cat ttt gac ctg gac aca gag 790
 Leu Gly Gln Leu Leu Gly Val Ala His His Phe Asp Leu Asp Thr Glu
 55 60 65

aca cca gcc aac gga tac cgt agt ttg gtg cac aca gcc cga tgc tgc 838
 Thr Pro Ala Asn Gly Tyr Arg Ser Leu Val His Thr Ala Arg Cys Cys
 70 75 80

ctg gca cac cta cta cac aaa tcc cgc tat gtg gct tct aac cgc aaa 886
 Leu Ala His Leu Leu His Lys Ser Arg Tyr Val Ala Ser Asn Arg Lys
 85 90 95

agt atc ttc ttc cgt gcc agc cac aac cta gca gag ctg gag gcc tac 934
 Ser Ile Phe Phe Arg Ala Ser His Asn Leu Ala Glu Leu Glu Ala Tyr
 100 105 110

ctg gcc gcc ctc acc cag ctc cgt gct atg gcc tac tat gcc cag cgc 982
 Leu Ala Ala Leu Thr Gln Leu Arg Ala Met Ala Tyr Tyr Ala Gln Arg
 115 120 125 130

ctg ctg acc atc aac cga cca gga gtg ctc ttc ttc gag ggt gat gaa 1030
 Leu Leu Thr Ile Asn Arg Pro Gly Val Leu Phe Phe Glu Gly Asp Glu
 135 140 145

gga ctc acc gct gac ttc ctg caa gag tat gtc acg cta cac aaa ggc 1078
 Gly Leu Thr Ala Asp Phe Leu Gln Glu Tyr Val Thr Leu His Lys Gly
 150 155 160

tgc ttc tac ggc cgc tgc ctg ggc ttc cag ttc aca cct gcc atc cgg	1126
Cys Phe Tyr Gly Arg Cys Leu Gly Phe Gln Phe Thr Pro Ala Ile Arg	
165 170 175	
ccg ttc ctg cag act ctc tcc atc ggg ctg gtg tcc ttc ggg gag cac	1174
Pro Phe Leu Gln Thr Leu Ser Ile Gly Leu Val Ser Phe Gly Glu His	
180 185 190	
tac aaa cgc aac gag aca ggc ctc agt gtg acc gcc agt tcc ctc ttt	1222
Tyr Lys Arg Asn Glu Thr Gly Leu Ser Val Thr Ala Ser Ser Leu Phe	
195 200 205 210	
acc ggt ggc cga ttc gcc ata gac cca gag ttg cgt ggg gct gaa ttt	1270
Thr Gly Gly Arg Phe Ala Ile Asp Pro Glu Leu Arg Gly Ala Glu Phe	
215 220 225	
gaa cgc atc ata cag aac ctg gat gtg cac ttc tgg aaa gcc ttc tgg	1318
Glu Arg Ile Ile Gln Asn Leu Asp Val His Phe Trp Lys Ala Phe Trp	
230 235 240	
aac atc act gag att gag gtg ctg tgc tct ctg gcc aac atg gca tca	1366
Asn Ile Thr Glu Ile Glu Val Leu Ser Ser Leu Ala Asn Met Ala Ser	
245 250 255	
acc act gtg agg gta agc cgc ctg ctc agc ttg cca cct gag gcc ttt	1414
Thr Thr Val Arg Val Ser Arg Leu Leu Ser Leu Pro Pro Glu Ala Phe	
260 265 270	
gag atg cca ctc acc tct gat ccc agg ctc aca gtt acc atc tca cct	1462
Glu Met Pro Leu Thr Ser Asp Pro Arg Leu Thr Val Thr Ile Ser Pro	
275 280 285 290	
ccc ttg gca cac acg gga cca gct cct gtg cta gcc agg ctc atc tcc	1510
Pro Leu Ala His Thr Gly Pro Ala Pro Val Leu Ala Arg Leu Ile Ser	
295 300 305	
tat gac cta cgg gaa gga cag gac agc aag gta ctc aac agc ctg gca	1558
Tyr Asp Leu Arg Glu Gly Gln Asp Ser Lys Val Leu Asn Ser Leu Ala	
310 315 320	
aaa tct gag ggc cca cgc ctg gac gtg cgc cca cgg cct cac caa gca	1606
Lys Ser Glu Gly Pro Arg Leu Asp Val Arg Pro Arg Pro His Gln Ala	
325 330 335	
ccc cgt tca cgg gcc ctg gtt gtt cac atc cac gga ggc ggc ttt gtg	1654
Pro Arg Ser Arg Ala Leu Val Val His Ile His Gly Gly Gly Phe Val	
340 345 350	
gca cag acc tct aaa tcc cac gag ccc tac ctc aag aac tgg gcc cag	1702
Ala Gln Thr Ser Lys Ser His Glu Pro Tyr Leu Lys Asn Trp Ala Gln	
355 360 365 370	
gag cta gga gtc cct atc ttc tcc atc gac tac tcc ctg gcc ccc gag	1750
Glu Leu Gly Val Pro Ile Phe Ser Ile Asp Tyr Ser Leu Ala Pro Glu	
375 380 385	
gct ccc ttt ccc cga gcg ctg gag gag tgt ttt ttt gcc tac tgc tgg	1798

Ala	Pro	Phe	Pro	Arg	Ala	Leu	Glu	Glu	Cys	Phe	Phe	Ala	Tyr	Cys	Trp	
			390					395					400			
gct	gtc	aag	cac	tgt	gac	ctg	ctt	ggg	tca	act	gga	gag	cgg	ata	tgc	1846
Ala	Val	Lys	His	Cys	Asp	Leu	Leu	Gly	Ser	Thr	Gly	Glu	Arg	Ile	Cys	
		405					410					415				
ctt	gca	ggg	gac	agt	gca	ggg	ggg	aat	ctc	tgc	atc	act	gtg	tcc	ctt	1894
Leu	Ala	Gly	Asp	Ser	Ala	Gly	Gly	Asn	Leu	Cys	Ile	Thr	Val	Ser	Leu	
	420					425					430					
cgg	gca	gca	gcc	tat	gga	gtg	agg	gtg	cca	gat	ggc	atc	atg	gca	gcc	1942
Arg	Ala	Ala	Ala	Tyr	Gly	Val	Arg	Val	Pro	Asp	Gly	Ile	Met	Ala	Ala	
435					440					445					450	
tac	cca	gtt	acc	acc	ctg	cag	tcc	tct	gct	tct	ccc	tct	cgt	ctg	ctg	1990
Tyr	Pro	Val	Thr	Thr	Leu	Gln	Ser	Ser	Ala	Ser	Pro	Ser	Arg	Leu	Leu	
			455					460						465		
agc	ctc	atg	gac	cct	ctt	cta	cca	ctg	agc	gta	ctc	tct	aag	tgt	gtc	2038
Ser	Leu	Met	Asp	Pro	Leu	Leu	Pro	Leu	Ser	Val	Leu	Ser	Lys	Cys	Val	
			470					475					480			
agt	gcc	tat	tca	ggg	aca	gag	gca	gag	gac	cat	ttt	gac	tca	gac	cag	2086
Ser	Ala	Tyr	Ser	Gly	Thr	Glu	Ala	Glu	Asp	His	Phe	Asp	Ser	Asp	Gln	
		485					490					495				
aag	gca	cta	ggc	gtg	atg	ggg	ctg	gtg	cag	aga	gac	act	tcg	ctg	ttc	2134
Lys	Ala	Leu	Gly	Val	Met	Gly	Leu	Val	Gln	Arg	Asp	Thr	Ser	Leu	Phe	
	500					505					510					
ctc	aga	gac	ctc	cga	ctg	ggg	gcc	tcc	tca	tgg	ctc	aac	tcc	ttc	ccg	2182
Leu	Arg	Asp	Leu	Arg	Leu	Gly	Ala	Ser	Ser	Trp	Leu	Asn	Ser	Phe	Pro	
515					520					525					530	
gaa	cta	agt	gga	cgc	aag	ccc	caa	aag	acc	aca	tcg	ccc	aca	gca	gag	2230
Glu	Leu	Ser	Gly	Arg	Lys	Pro	Gln	Lys	Thr	Thr	Ser	Pro	Thr	Ala	Glu	
				535				540						545		
tct	gtg	cgc	ccc	acg	gag	tct	atg	cgc	agg	agt	gtg	tct	gag	gca	gcc	2278
Ser	Val	Arg	Pro	Thr	Glu	Ser	Met	Arg	Arg	Ser	Val	Ser	Glu	Ala	Ala	
			550					555					560			
ctg	gcc	cag	cct	gag	ggc	tta	ctg	ggc	aca	gat	acc	ttg	aag	aag	ctg	2326
Leu	Ala	Gln	Pro	Glu	Gly	Leu	Leu	Gly	Thr	Asp	Thr	Leu	Lys	Lys	Leu	
		565					570					575				
aca	ata	aag	gac	ttg	agc	aac	tca	gag	cct	tca	gac	agc	ccc	gag	atg	2374
Thr	Ile	Lys	Asp	Leu	Ser	Asn	Ser	Glu	Pro	Ser	Asp	Ser	Pro	Glu	Met	
	580					585					590					
tca	cag	tca	atg	gag	aca	ctt	ggc	ccc	tcc	aca	ccc	tct	gat	gtc	aac	2422
Ser	Gln	Ser	Met	Glu	Thr	Leu	Gly	Pro	Ser	Thr	Pro	Ser	Asp	Val	Asn	
595					600					605					610	
ttt	ttt	ctg	cgg	cct	ggg	aat	tcc	cag	gaa	gag	gct	gaa	gcc	aaa	gat	2470
Phe	Phe	Leu	Arg	Pro	Gly	Asn	Ser	Gln	Glu	Glu	Ala	Glu	Ala	Lys	Asp	

615	620	625	
gaa gtg aga ccc atg gac gga gtc ccc cgc gtg cgc gct gct ttc cct			2518
Glu Val Arg Pro Met Asp Gly Val Pro Arg Val Arg Ala Ala Phe Pro			
630	635	640	
gag ggg ttt cac ccc cgg cgc tca agc caa ggt gtc ctc cac atg ccc			2566
Glu Gly Phe His Pro Arg Arg Ser Ser Gln Gly Val Leu His Met Pro			
645	650	655	
ctc tac acg tca ccc ata gtc aag aac ccc ttc atg tct cct ctg ctg			2614
Leu Tyr Thr Ser Pro Ile Val Lys Asn Pro Phe Met Ser Pro Leu Leu			
660	665	670	
gcc cct gac agc atg ctg aag acc ttg ccg cct gtg cac ctt gtg gct			2662
Ala Pro Asp Ser Met Leu Lys Thr Leu Pro Pro Val His Leu Val Ala			
675	680	685	690
tgc gct ctg gac ccc atg cta gat gac tcg gtc atg ttc gcg cgg cga			2710
Cys Ala Leu Asp Pro Met Leu Asp Asp Ser Val Met Phe Ala Arg Arg			
695	700	705	
ctg cgc gac ctg ggc cag ccg gtg acg ctg aaa gtg gta gaa gat ctg			2758
Leu Arg Asp Leu Gly Gln Pro Val Thr Leu Lys Val Val Glu Asp Leu			
710	715	720	
ccg cat ggc ttc ctg agc ctg gcg gca ctg tgt cgc gag acc cgg cag			2806
Pro His Gly Phe Leu Ser Leu Ala Ala Leu Cys Arg Glu Thr Arg Gln			
725	730	735	
gcc acg gag ttc tgc gtg cag cgc atc cgg ctg atc ctc acc ccg cct			2854
Ala Thr Glu Phe Cys Val Gln Arg Ile Arg Leu Ile Leu Thr Pro Pro			
740	745	750	
gct gca cca ctg aac tga gctgggggacg gcggggggcg gcactaaaag			2902
Ala Ala Pro Leu Asn			
755			
acctcttgct cccatctgcg cgggcttccg ttatgagtgc gctccgagat gggctccagg			2962
ccccctcagt cgggctgggc gggcgggagtg gggctgtgct taacttgaga cagtaagtgg			3022
ggcgggacag gggccaaaag ctgaacctgg gggagggaca cacacacacc tgtcactgag			3082
acagctggat ctgcactcta ccactgcctt ctgctgctgt gaccgaccg gctagtcggt			3142
tttgctttt tgtaaataaa agttatttaa			3172
<210> 11			
<211> 20			
<212> DNA			
<213> Artificial Sequence			
<220>			
<223> PCR Primer			
<400> 11			
tgcaccactg aactgagctg			20
<210> 12			
<211> 19			

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR Primer

 <400> 12
 ccgccccact tactgtctc 19

 <210> 13
 <211> 50
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR Probe

 <400> 13
 cggcgggggg cggcactaaa agacctcttg ctcccatctg cgcgggcttc 50

 <210> 14
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR Primer

 <400> 14
 ggcaaattca acggcacagt 20

 <210> 15
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR Primer

 <400> 15
 gggctctcgct cctggaagct 20

 <210> 16
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR Probe

 <400> 16
 aaggccgaga atgggaagct tgtcatc 27

 <210> 17
 <211> 3255
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (632)...(2959)

<400> 17

```

aggaaagatg ggaagggggc cccgactcct gggtcctgag aatggggacc aactggaggt 60
ttagacttct tggaatctag gagaaggagt cttgggcccc aggagaattc atggagacag 120
gtgactagac tcttgggttc ctggaaggaa gaaagaagga ccggcagcct cctggatcac 180
aggagaggtg aatgagttag ggaagcagag tcgtgtgggc tcagggaatg tccggattcg 240
aggaggccag ggcagcaagt ttctgagtcc caaagaggtg atagcagggg ctccctgggtc 300
ctgaagagga agggcttggg gcttggactc ctgggtctga gggaggaggg agctgagggc 360
ccaaactcct ggctcccagag gaggggtcaaa ggcactggga actggggccc ccaaacttct 420
gattcccaga gacaagaggg tgaccctctc tatgtctaag gaggaggaac ctgggtcctg 480
ggccctggaa ctgaaagaag acagcactga ggtttgaagg aggagtgggt aagctatgcc 540
cagactcctg ggccccagct aagcaaggct tgatccagcc ccacctaaca ggctcccca 600
cctgcccaca gcctcaaggc tcatccacaa c atg gac ctg cgc aca atg aca 652

```

Met Asp Leu Arg Thr Met Thr

1

5

```

cag tcg ctg gtg act ctg gcg gag gac aac ata gcc ttc ttc tcg agc 700
Gln Ser Leu Val Thr Leu Ala Glu Asp Asn Ile Ala Phe Phe Ser Ser
      10              15              20

```

```

cag ggt cct ggg gaa acg gcc cag cgg ctg tca ggc gtt ttt gcc ggt 748
Gln Gly Pro Gly Glu Thr Ala Gln Arg Leu Ser Gly Val Phe Ala Gly
      25              30              35

```

```

gta cgg gag cag gcg ctg ggg ctg gag ccg gcc ctg ggc cgc ctg ctg 796
Val Arg Glu Gln Ala Leu Gly Leu Glu Pro Ala Leu Gly Arg Leu Leu
      40              45              50              55

```

```

ggg ggt ggc cac ctc ttt gac ctg gac cca gag aca ccg gcc aac ggg 844
Gly Val Ala His Leu Phe Asp Leu Asp Pro Glu Thr Pro Ala Asn Gly
      60              65              70

```

```

tac cgc agc cta gtg cac aca gcc cgc tgc tgc ctg gcg cac ctc ctg 892
Tyr Arg Ser Leu Val His Thr Ala Arg Cys Cys Leu Ala His Leu Leu
      75              80              85

```

```

cac aaa tcc cgc tat gtg gcc tcc aac cgc cgc agc atc ttc ttc cgc 940
His Lys Ser Arg Tyr Val Ala Ser Asn Arg Arg Ser Ile Phe Phe Arg
      90              95              100

```

```

acc agc cac aac ctg gcc gag ctg gag gcc tac ctg gct gcc ctc acc 988
Thr Ser His Asn Leu Ala Glu Leu Glu Ala Tyr Leu Ala Ala Leu Thr
      105              110              115

```

```

cag ctc cgc gct ctg gtc tac tac gcc cag cgc ctg ctg gtt acc aat 1036
Gln Leu Arg Ala Leu Val Tyr Tyr Ala Gln Arg Leu Leu Val Thr Asn
      120              125              130              135

```

```

cgg ccg ggg gta ctc ttc ttt gag ggc gac gag ggg ctc acc gcc gac 1084
Arg Pro Gly Val Leu Phe Phe Glu Gly Asp Glu Gly Leu Thr Ala Asp
      140              145              150

```

```

ttc ctc cgg gag tat gtc acg ctg cat aag gga tgc ttc tat ggc cgc 1132

```

Phe	Leu	Arg	Glu	Tyr	Val	Thr	Leu	His	Lys	Gly	Cys	Phe	Tyr	Gly	Arg	
			155					160					165			
tgc	ctg	ggc	ttc	cag	ttc	acg	cct	gcc	atc	cgg	cca	ttc	ctg	cag	acc	1180
Cys	Leu	Gly	Phe	Gln	Phe	Thr	Pro	Ala	Ile	Arg	Pro	Phe	Leu	Gln	Thr	
		170					175					180				
atc	tcc	att	ggg	ctg	gtg	tcc	ttc	ggg	gag	cac	tac	aaa	cgc	aac	gag	1228
Ile	Ser	Ile	Gly	Leu	Val	Ser	Phe	Gly	Glu	His	Tyr	Lys	Arg	Asn	Glu	
	185					190					195					
aca	ggc	ctc	agt	gtg	gcc	gcc	agc	tct	ctc	ttc	acc	agc	ggc	cgc	ttt	1276
Thr	Gly	Leu	Ser	Val	Ala	Ala	Ser	Ser	Leu	Phe	Thr	Ser	Gly	Arg	Phe	
200				205						210					215	
gcc	atc	gac	ccc	gag	ctg	cgt	ggg	gct	gag	ttt	gag	cgg	atc	aca	cag	1324
Ala	Ile	Asp	Pro	Glu	Leu	Arg	Gly	Ala	Glu	Phe	Glu	Arg	Ile	Thr	Gln	
			220					225						230		
aac	ctg	gac	gtg	cac	ttc	tgg	aaa	gcc	ttc	tgg	aac	atc	acc	gag	atg	1372
Asn	Leu	Asp	Val	His	Phe	Trp	Lys	Ala	Phe	Trp	Asn	Ile	Thr	Glu	Met	
		235					240					245				
gaa	gtg	cta	tcg	tct	ctg	gcc	aac	atg	gca	tcg	gcc	acc	gtg	agg	gta	1420
Glu	Val	Leu	Ser	Ser	Leu	Ala	Asn	Met	Ala	Ser	Ala	Thr	Val	Arg	Val	
	250						255					260				
agc	cgc	ctg	ctc	agc	ctg	cca	ccc	gaa	gcc	ttt	gag	atg	cca	ctg	act	1468
Ser	Arg	Leu	Leu	Ser	Leu	Pro	Pro	Glu	Ala	Phe	Glu	Met	Pro	Leu	Thr	
	265					270					275					
gcc	gac	ccc	acg	ctc	acg	gtc	acc	atc	tca	ccc	cca	ctg	gcc	cac	aca	1516
Ala	Asp	Pro	Thr	Leu	Thr	Val	Thr	Ile	Ser	Pro	Pro	Leu	Ala	His	Thr	
280				285						290					295	
ggc	cct	ggg	ccc	gtc	ctc	gtc	agg	ctc	atc	tcc	tat	gac	ctg	cgt	gaa	1564
Gly	Pro	Gly	Pro	Val	Leu	Val	Arg	Leu	Ile	Ser	Tyr	Asp	Leu	Arg	Glu	
			300						305				310			
gga	cag	gac	agt	gag	gag	ctc	agc	agc	ctg	ata	aag	tcc	aac	ggc	caa	1612
Gly	Gln	Asp	Ser	Glu	Glu	Leu	Ser	Ser	Leu	Ile	Lys	Ser	Asn	Gly	Gln	
		315					320					325				
cgg	agc	ctg	gag	ctg	tgg	ccg	cgc	ccc	cag	cag	gca	ccc	cgc	tcg	cgg	1660
Arg	Ser	Leu	Glu	Leu	Trp	Pro	Arg	Pro	Gln	Gln	Ala	Pro	Arg	Ser	Arg	
	330					335					340					
tcc	ctg	ata	gtg	cac	ttc	cac	ggc	ggt	ggc	ttt	gtg	gcc	cag	acc	tcc	1708
Ser	Leu	Ile	Val	His	Phe	His	Gly	Gly	Gly	Phe	Val	Ala	Gln	Thr	Ser	
	345					350					355					
aga	tcc	cac	gag	ccc	tac	ctc	aag	agc	tgg	gcc	cag	gag	ctg	ggc	gcc	1756
Arg	Ser	His	Glu	Pro	Tyr	Leu	Lys	Ser	Trp							

380																385				390				
cgt	gcg	ctg	gag	gag	tgc	ttc	ttc	gcc	tac	tgc	tgg	gcc	atc	aag	cac	1852								
Arg	Ala	Leu	Glu	Glu	Cys	Phe	Phe	Ala	Tyr	Cys	Trp	Ala	Ile	Lys	His									
			395				400				405													
tgc	gcc	ctc	ctt	ggc	tca	aca	ggg	gaa	cga	atc	tgc	ctt	gcg	ggg	gac	1900								
Cys	Ala	Leu	Leu	Gly	Ser	Thr	Gly	Glu	Arg	Ile	Cys	Leu	Ala	Gly	Asp									
			410				415				420													
agt	gca	ggc	ggg	aac	ctc	tgc	ttc	acc	gtg	gct	ctt	cgg	gca	gca	gcc	1948								
Ser	Ala	Gly	Gly	Asn	Leu	Cys	Phe	Thr	Val	Ala	Leu	Arg	Ala	Ala	Ala									
			425				430				435													
tac	ggg	gtg	cgg	gtg	cca	gat	ggc	atc	atg	gca	gcc	tac	ccg	gcc	aca	1996								
Tyr	Gly	Val	Arg	Val	Pro	Asp	Gly	Ile	Met	Ala	Ala	Tyr	Pro	Ala	Thr									
440			445				450				455													
atg	ctg	cag	cct	gcc	gcc	tct	ccc	tcc	cgc	ctg	ctg	agc	ctc	atg	gac	2044								
Met	Leu	Gln	Pro	Ala	Ala	Ser	Pro	Ser	Arg	Leu	Leu	Ser	Leu	Met	Asp									
			460				465				470													
ccc	ttg	ctg	ccc	ctc	agt	gtg	ctc	tcc	aag	tgt	gtc	agc	gcc	tat	gct	2092								
Pro	Leu	Leu	Pro	Leu	Ser	Val	Leu	Ser	Lys	Cys	Val	Ser	Ala	Tyr	Ala									
			475				480				485													
ggg	gca	aag	acg	gag	gac	cac	tcc	aac	tca	gac	cag	aaa	gcc	ctc	ggc	2140								
Gly	Ala	Lys	Thr	Glu	Asp	His	Ser	Asn	Ser	Asp	Gln	Lys	Ala	Leu	Gly									
			490				495				500													
atg	atg	ggg	ctg	gtg	cgg	cgg	gac	aca	gcc	ctg	ctc	ctc	cga	gac	ttc	2188								
Met	Met	Gly	Leu	Val	Arg	Arg	Asp	Thr	Ala	Leu	Leu	Leu	Arg	Asp	Phe									
			505				510				515													
cgc	ctg	ggg	gcc	tcc	tca	tgg	ctc	aac	tcc	ttc	ctg	gag	tta	agt	ggg	2236								
Arg	Leu	Gly	Ala	Ser	Ser	Trp	Leu	Asn	Ser	Phe	Leu	Glu	Leu	Ser	Gly									
520			525				530				535													
cgc	aag	tcc	cag	aag	atg	tcg	gag	ccc	ata	gca	gag	ccg	atg	cgc	cgc	2284								
Arg	Lys	Ser	Gln	Lys	Met	Ser	Glu	Pro	Ile	Ala	Glu	Pro	Met	Arg	Arg									
			540				545				550													
agt	gtg	tct	gaa	gca	gca	ctg	gcc	cag	ccc	cag	ggc	cca	ctg	ggc	acg	2332								
Ser	Val	Ser	Glu	Ala	Ala	Leu	Ala	Gln	Pro	Gln	Gly	Pro	Leu	Gly	Thr									
			555				560				565													
gat	tcc	ctc	aag	aac	ctg	acc	ctg	agg	gac	ttg	agc	ctg	agg	gga	aac	2380								
Asp	Ser	Leu	Lys	Asn	Leu	Thr	Leu	Arg	Asp	Leu	Ser	Leu	Arg	Gly	Asn									
			570				575				580													
tcc	gag	acg	tcg	tcg	gac	acc	ccc	gag	atg	tcg	ctg	tca	gct	gag	aca	2428								
Ser	Glu	Thr	Ser	Ser	Asp	Thr	Pro	Glu	Met	Ser	Leu	Ser	Ala	Glu	Thr									
585			590				595																	
ctt	agc	ccc	tcc	aca	ccc	tcc	gat	gtc	aac	ttc	tta	tta	cca	cct	gag	2476								
Leu	Ser	Pro	Ser	Thr	Pro	Ser	Asp	Val	Asn	Phe	Leu	Leu	Pro	Pro	Glu									
600			605				610				615													

```

gat gca ggg gaa gag gct gag gcc aaa aat gag ctg agc ccc atg gac 2524
Asp Ala Gly Glu Glu Ala Glu Ala Lys Asn Glu Leu Ser Pro Met Asp
620 625 630

aga ggc ctg ggc gtc cgt gcc gcc ttc ccc gag ggt ttc cac ccc cga 2572
Arg Gly Leu Gly Val Arg Ala Ala Phe Pro Glu Gly Phe His Pro Arg
635 640 645

cgc tcc agc cag ggt gcc aca cag atg ccc ctc tac tcc tca ccc ata 2620
Arg Ser Ser Gln Gly Ala Thr Gln Met Pro Leu Tyr Ser Ser Pro Ile
650 655 660

gtc aag aac ccc ttc atg tcg ccg ctg ctg gca ccc gac agc atg ctc 2668
Val Lys Asn Pro Phe Met Ser Pro Leu Leu Ala Pro Asp Ser Met Leu
665 670 675

aag agc ctg cca cct gtg cac atc gtg gcg tgc gcg ctg gac ccc atg 2716
Lys Ser Leu Pro Pro Val His Ile Val Ala Cys Ala Leu Asp Pro Met
680 685 690 695

ctg gac gac tcg gtc atg ctc gcg cgg cga ctg cgc aac ctg ggc cag 2764
Leu Asp Asp Ser Val Met Leu Ala Arg Arg Leu Arg Asn Leu Gly Gln
700 705 710

ccg gtg acg ctg cgc gtg gtg gag gac ctg ccg cac ggc ttc ctg acc 2812
Pro Val Thr Leu Arg Val Val Glu Asp Leu Pro His Gly Phe Leu Thr
715 720 725

cta gcg gcg ctg tgc cgc gag acg cgc cag gcc gca gag ctg tgc gtg 2860
Leu Ala Ala Leu Cys Arg Glu Thr Arg Gln Ala Ala Glu Leu Cys Val
730 735 740

gag cgc atc cgc ctc gtc ctc act cct ccc gcc gga gcc ggg ccg agc 2908
Glu Arg Ile Arg Leu Val Leu Thr Pro Pro Ala Gly Ala Gly Pro Ser
745 750 755

ggg gag acg ggg gct gcg ggg gta gac ggg ggc tgc ggg ggg cga cac 2956
Gly Glu Thr Gly Ala Ala Gly Val Asp Gly Gly Cys Gly Gly Arg His
760 765 770 775

taa aagcctgttg ttcccatctg cgccggcctc cgtcatgaat gccttcggg 3009

ccgggacggaa ggggacgcgg gctgtgctta cttaagtcgg ggggtggcaag ggggcggggc 3069
gggggacgaa agctgagacc ctgcgccagg ggagggggac gcgcacacac accggtcacc 3129
gagacggctg gacctgcacg ccaccgctgc cttttgctgc tgctgctgcg gcgaccgccg 3189
cagggacggg gactggccct cccttgccagg tcggtttggt ttgttgtaaa taaaagtatt 3249
taatta 3255

<210> 18
<211> 266
<212> DNA
<213> Homo sapiens

<400> 18
tttttttttt ttccaggagc tcatgaaacg ttactgaat gaatgtgtct tccccgcaca 60

```

tccctgtgcc tcgctcctgc cctgtcccca tccctctctt gagcgggtggg tgacgcagcc 120
gcgtctctcc acagttcacg cctgccatcc ggccattcct gcagaccatc tccattgggc 180
tggtgtcctt cggggagcac ggtcaccgag acggctggac ctgcacgcca ccgctgcctt 240
ttgctgctgc tgctgcggcg accgcg 266

<210> 19
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 19
ttgattcctc atgatggcac 20

<210> 20
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 20
cattgattcc tcatgatggc 20

<210> 21
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 21
cacagatctc tcattgattc 20

<210> 22
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 22
tcttcacaga tctctcattg 20

<210> 23
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 23	
caggttctat ccttctgggc	20
<210> 24	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 24	
ccctcacggg agatattgat	20
<210> 25	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 25	
cctggctcca ttgttatctc	20
<210> 26	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 26	
ctgacttaga acctggctcc	20
<210> 27	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 27	
ttctggccca ggctctagcg	20
<210> 28	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 28	
tgggtattgg atccctgcag	20

<210> 29
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 29
 cctagcccag gtccctgctg 20

 <210> 30
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 30
 gctccagggt tagcctgggc 20

 <210> 31
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 31
 gccttccact ctagggctga 20

 <210> 32
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 32
 atctgcgacc cactcagaaa 20

 <210> 33
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 33
 aatctgtgtc tgaagatgat 20

 <210> 34

<211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 34
 atcgtggctg gagaatctgt 20

 <210> 35
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 35
 ggctgtatcc tggtagtgtc 20

 <210> 36
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 36
 tgcgcaggtc catgttgtagg 20

 <210> 37
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 37
 gccagagtca ccagcgactg 20

 <210> 38
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 38
 atgttgtoct ccgccagagt 20

 <210> 39
 <211> 20
 <212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 39

cccaggaccc tggctcgaga

20

<210> 40

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 40

ggctgcggta cccgttggcc

20

<210> 41

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 41

cagcgggctg tgtgcactag

20

<210> 42

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 42

ttgtgcagga ggtgcgccag

20

<210> 43

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 43

acatagcggg atttgtgcag

20

<210> 44

<211> 20

<212> DNA

<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 44
cggttggagg ccacatagcg 20

<210> 45
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 45
caggtaggcc tccagctcgg 20

<210> 46
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 46
tcgccctcaa agaagagtac 20

<210> 47
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 47
ttatgcagcg tgacatactc 20

<210> 48
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 48
agcatccctt atgcagcgtg 20

<210> 49
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 49	
gaagcccagg cagcggccat	20
<210> 50	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 50	
gagatggtct gcaggaatgg	20
<210> 51	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 51	
atggagatgg tctgcaggaa	20
<210> 52	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 52	
gtgtgatccg ctcaaactca	20
<210> 53	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 53	
agagacgata gcacttccat	20
<210> 54	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 54	

acgcagggtca taggagatga	20
<210> 55	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 55	
ctttatcagg ctgctgagct	20
<210> 56	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 56	
ccacaaagcc accgccgtgg	20
<210> 57	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 57	
tctgggccac aaagccaccg	20
<210> 58	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 58	
gcactcctcc agcgcacggg	20
<210> 59	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 59	
agcagtaggc gaagaagcac	20

<210> 60
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 60
ttcgttcccc tggtgagcca 20

<210> 61
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 61
cagaggttcc cgcctgcact 20

<210> 62
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 62
gtgaagcaga gggtcccgcc 20

<210> 63
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 63
aagagccacg gtgaagcaga 20

<210> 64
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 64
tcctcgtct ttgcaccagc 20

<210> 65
<211> 20

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 65
 ggctgtgtcc cgccgcacca 20

 <210> 66
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 66
 ccacttaact ccaggaagga 20

 <210> 67
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 67
 ttctgggact tgcgccact 20

 <210> 68
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 68
 cagtgtgtgt tcagacacac 20

 <210> 69
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 69
 aggttcttga gggaatccgt 20

 <210> 70
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 70
tttttgacct cagcctcttc 20

<210> 71
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 71
agctcatttt tggcctcagc 20

<210> 72
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 72
actatgggtg aggagtagag 20

<210> 73
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 73
ctggcccagg ttgcgcagtc 20

<210> 74
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 74
acaggctttt agtgctgccc 20

<210> 75
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 75

aaggcattca tgacggaggc

20

<210> 76

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 76

ggaaggcatt catgacggag

20

<210> 77

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 77

gcaggtccag ccgtctcggt

20

<210> 78

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 78

ggtccccatt ctcaggaccc

20

<210> 79

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 79

agaagtctaa acctccagtt

20

<210> 80

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 80
cctggcctcc tcgaatccgg 20

<210> 81
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 81
ctatcacctc tttgggactc 20

<210> 82
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 82
ttcctcctcc ttagacataa 20

<210> 83
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 83
acacattcat tcagtaaacg 20

<210> 84
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 84
gtcaccacc gctcaagaga 20

<210> 85
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 85
gtggatgagc cttgaggctg 20

<210> 86
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 86
catgttggtg atgagccttg 20

<210> 87
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 87
accagcgact gtgtcattgt 20

<210> 88
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 88
agaaggctat gttgtcctcc 20

<210> 89
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 89
ctcgagaaga aggctatgtt 20

<210> 90
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 90
gaccctggct cgagaagaag 20

<210> 91

<211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 91
 aagaggtgcg ccacacccag 20

 <210> 92
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 92
 ctgggtccag gtcaaagagg 20

 <210> 93
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 93
 gtacccgttg gccggtgtct 20

 <210> 94
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 94
 gtgcactagg ctgcggtacc 20

 <210> 95
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 95
 aggcctccag ctcggccagg 20

 <210> 96
 <211> 20
 <212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 96

gagggcagcc aggtaggcct

20

<210> 97

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 97

ggcgtagtag accagagcgc

20

<210> 98

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 98

ctcaaagaag agtacccccg

20

<210> 99

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 99

acatactccc ggaggaagtc

20

<210> 100

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 100

ccatagaagc atcccttatg

20

<210> 101

<211> 20

<212> DNA

<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 101
agcggccata gaagcatccc 20

<210> 102
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 102
ccgaaggaca ccagcccaat 20

<210> 103
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 103
gagagagctg gcggccacac 20

<210> 104
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 104
aagcggccgc tgggtgaagag 20

<210> 105
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 105
catctcgggtg atgttccaga 20

<210> 106
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 106
agcacttcca tctcggtgat 20

<210> 107
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 107
cggcttaccc tcacggtggc 20

<210> 108
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 108
ctcaaaggct tcgggtggca 20

<210> 109
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 109
gtggcatctc aaaggcttcg 20

<210> 110
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 110
agtcagtggc atctcaaagg 20

<210> 111
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 111

cctgacgagg acgggcccag 20

<210> 112
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 112
tgtccttcac gcaggtcata 20

<210> 113
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 113
ggccgttgga ctttatcagg 20

<210> 114
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 114
ccaggctccg ttggccgttg 20

<210> 115
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 115
accgccgtgg aagtgcacta 20

<210> 116
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 116
tgggccccagc tcttgaggtta 20

<210> 117
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 117
 aggccaagaa gcactcctcc 20

 <210> 118
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 118
 ggcccagcag taggcgaaga 20

 <210> 119
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 119
 gtgcttgatg gccagcagt 20

 <210> 120
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 120
 aggagggcgc agtgcttgat 20

 <210> 121
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Oligonucleotide

 <400> 121
 cctgttgagc caaggagggc 20

 <210> 122
 <211> 20

<220>
<223> Antisense Oligonucleotide

<400> 127
gacacacttg gagagcacac 20

<210> 128
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 128
cgtctttgca ccagcatagg 20

<210> 129
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 129
ggagtgggtcc tccgtctttg 20

<210> 130
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 130
gggctttctg gtctgagttg 20

<210> 131
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 131
ggagcagggc tgtgtcccgc 20

<210> 132
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 132

aagtctcggg gagcagggc

20

<210> 133

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 133

gccatgagga ggcacccagg

20

<210> 134

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 134

ctccaggaag gagttgagcc

20

<210> 135

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 135

ttgcgcccac ttaactccag

20

<210> 136

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 136

tatgggctcc gacatcttct

20

<210> 137

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 137
cggctctgct atgggctccg 20

<210> 138
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 138
gcttcagaca cactgcggcg 20

<210> 139
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 139
ggctcaagtc cctcagggtc 20

<210> 140
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 140
tcagctgaca ggcacatctc 20

<210> 141
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 141
taataagaag ttgacatcgg 20

<210> 142
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 142
tcccctgcat cctcaggtgg 20

<210> 143
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 143
acgcccaggc ctctgtccat 20

<210> 144
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 144
tggcaccctg gctggagcgt 20

<210> 145
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 145
ggtgccagca gcggcgacat 20

<210> 146
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 146
tgagcatgct gtcgggtgcc 20

<210> 147
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 147
gatgtgcaca ggtggcaggc 20

<210> 148

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 148
gcgtcaccgg ctggcccagg 20

<210> 149
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 149
cgtgcggcag gtcctccacc 20

<210> 150
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 150
gccgctaggg tcaggaagcc 20

<210> 151
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 151
gcgctccacg cacagctctg 20

<210> 152
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 152
gccggcgcag atgggaacaa 20

<210> 153
<211> 20
<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 153

cccggcccgg aaggcattca

20

<210> 154

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 154

ttaagtaagc acagcccgcg

20

<210> 155

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 155

ccacccccga cttaagtaag

20

<210> 156

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 156

ggcgagggtc tcagctttcg

20

<210> 157

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 157

cggtggcgtg caggtccagc

20

<210> 158

<211> 20

<212> DNA

<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 158
aaaccgacct gcaagggagg 20

<210> 159
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 159
gctcctcttc agaattagaa 20

<210> 160
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 160
accaagtatt caaacctagg 20

<210> 161
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 161
tttgctctgt caggcccagg 20

<210> 162
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 162
gcgtaaatacc atgctgtgtg 20

<210> 163
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 163
ctggcttgag aagaaggcca 20

<210> 164
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 164
cgtgctgtct ctctggggcc 20

<210> 165
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 165
gttcccgaac acctgcaaag 20

<210> 166
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 166
cccagtcct gttcccgaac 20

<210> 167
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 167
aaatggtgtg ccacacccaa 20

<210> 168
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 168

ggtatccggtt ggctgggtgtc 20

<210> 169

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 169

gtagtaggtg tgccaggcag 20

<210> 170

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 170

gccacatagc gggatttgtg 20

<210> 171

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 171

tggctggcac ggaagaagat 20

<210> 172

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 172

tgctaggttg tggctggcac 20

<210> 173

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 173

atggtcagca ggcgctgggc 20

<210> 174
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 174
agagcactcc tggtcggttg

20

<210> 175
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 175
tgaactggaa gcccaggcag

20

<210> 176
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 176
atggcaggtg tgaactggaa

20

<210> 177
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 177
tctgcaggaa cggccggatg

20

<210> 178
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 178
caccagcccg atggagagag

20

<210> 179
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 179
gtctcgttgc gttttagtg 20

<210> 180
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 180
tgggtctatg gcgaatcggc 20

<210> 181
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 181
aattcagccc cacgcaactc 20

<210> 182
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 182
tccaggttct gtatgatgcg 20

<210> 183
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 183
aaggctttcc agaagtgcac 20

<210> 184
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 184
tccagaaggc tttccagaag

20

<210> 185
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 185
atgccatggt ggccagagac

20

<210> 186
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 186
agcaggcggc ttaccctcac

20

<210> 187
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 187
gtggcatctc aaaggcctca

20

<210> 188
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 188
gtgagatggt aactgtgagc

20

<210> 189
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 189

tgtgccaagg gagtgagat

20

<210> 190

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 190

tggtcccgtg tgtgccaagg

20

<210> 191

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 191

atgagcctgg ctagcacagg

20

<210> 192

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 192

aggtcatagg agatgagcct

20

<210> 193

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 193

gattttgccca ggctgttgag

20

<210> 194

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 194
tgggccctca gattttgcca 20

<210> 195
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 195
gaggtctgtg ccacaaagcc 20

<210> 196
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 196
ggcccagttc ttgaggtagg 20

<210> 197
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 197
ctagctcctg ggcccagttc 20

<210> 198
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 198
ccagggagta gtcgatggag 20

<210> 199
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 199
gacagcccag cagtaggcaa 20

<210> 200
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 200
cacagtgcctt gacagcccag 20

<210> 201
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 201
gcaaggcata tccgctctcc 20

<210> 202
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 202
gctgctgccc gaaggacac 20

<210> 203
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 203
tgccatgatg ccatctggca 20

<210> 204
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 204
taggctgcca tgatgccatc 20

<210> 205

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 205
gactgcaggg tggtaactgg 20

<210> 206
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 206
agacgagagg gagaagcaga 20

<210> 207
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 207
acgctcagtg gtagaagagg 20

<210> 208
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 208
tctgagtcaa aatggtcctc 20

<210> 209
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 209
tgccttctgg tctgagtcaa 20

<210> 210
<211> 20
<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 210

gtgtctctct gcaccagccc

20

<210> 211

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 211

cggaggtctc tgaggaacag

20

<210> 212

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 212

gagttgagcc atgaggaggc

20

<210> 213

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 213

ctcctgcgca tagactccgt

20

<210> 214

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 214

ccagggtgc ctcagacaca

20

<210> 215

<211> 20

<212> DNA

<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 215
agccctcagg ctgggccagg 20

<210> 216
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 216
attgactgtg acatctcggg 20

<210> 217
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 217
aagtgtctcc attgactgtg 20

<210> 218
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 218
gcctcttcct gggaattccc 20

<210> 219
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 219
gacaccttgg cttgagcgcc 20

<210> 220
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Oligonucleotide

<400> 220	
gcatgtggag gacaccttgg	20
<210> 221	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 221	
ggttccttgac tatgggtgac	20
<210> 222	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 222	
cagcagagga gacatgaagg	20
<210> 223	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 223	
cgcgcggaaca tgaccgagtc	20
<210> 224	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 224	
tctaccactt tcagcgtcac	20
<210> 225	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 225	

cagccggatg cgctgcacgc

20

<210> 226

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 226

aagaggtctt ttagtgccgc

20

<210> 227

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 227

ttactgtctc aagttaagca

20

<210> 228

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 228

ggttcagctt ttggcccctg

20

<210> 229

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 229

aaggcagtgg tagagtgcag

20

<210> 230

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 230

taacttttat ttacaaaaag

20